

Rec'd PCT/PTO 31 OCT 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



10/541182

(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062697 A3

(51) International Patent Classification: B32B 27/04, C12N 5/00, 5/02

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(21) International Application Number:
PCT/US2004/000255

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 7 January 2004 (07.01.2004)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

Published:

— with international search report

(26) Publication Language: English

(88) Date of publication of the International search report:
26 January 2006

(30) Priority Data:
60/438,393 7 January 2003 (07.01.2003) US

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(54) Title: SILK FIBROIN MATERIALS AND USE THEREOF

(57) Abstract: The present invention provides processes for producing porous silk fibroin scaffold material. The porous silk fibroin scaffold can be used for tissue engineering. The porosity of the silk fibroin scaffolds described herein can be adjusted as to mimic the gradient of densities found in natural tissue. Accordingly, methods for engineering of 3-dimensional tissue, e.g. bone and cartilage, using the silk fibroin scaffold material are also provided.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00255

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B32B 27/04; C12N 5/00, 5/02
US CL : 424/423; 435/325, 395; 442/128

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/423; 435/325, 395; 442/128

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
REGISTRY

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A, P | DAL Pra Ilaria et al. Silk fibroin-coated Three-dimensional Polyurethane Scaffolds for Tissue Engineering: Interactions with Normal Human Fibroblasts. <i>Tissue Engineering</i> . December 2003, Volume 9, Number 6, Pages 1113-1121. Entire Document, Especially Abstract, Lines 1-15. | 1-59 |
| Y, P | US 2004/224406 A1 (ALTMAN et al.) 11 November 2004 (11.11.2004), Entire Document, especially Abstract, Lines 1-11. | 1-59 |

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|---|---|
| Date of the actual completion of the international search 21 September 2005 (21.09.2005) | Date of mailing of the international search report 31 OCT 2005 |
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 | Authorized officer <i>Maria J. Watson</i> Dr. Kailash C. Srivastava Telephone No. 703-308-0196 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/00255

Continuation of B. FIELDS SEARCHED Item 3:**WEST:**

DWPI, EPAB, JPAB, PGPB, USOC, USPT

STN:

APOLLIT, BIOSIS, CAPLUS, CEN, CIN, CONSCI, DISSABS, EMBASE, JAPIO, JICST-EPLUS, MEDLINE, PROMPT, RAPRA, SCISEARCH, WPIDS

Search Strategy:

fibroin, silk, porous, three-dimensional, pores, tissue, bone, porosity, porosity, fiber, cartilage, chondrocytes, tissue engineering, silk worm, Bombyx mori, spider, engineered silk, polymer, PEG, polyurethane, additive